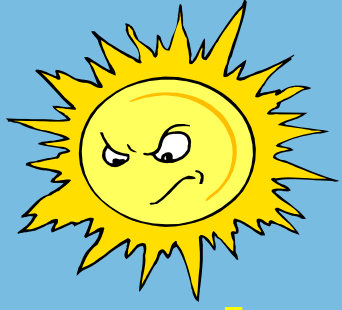
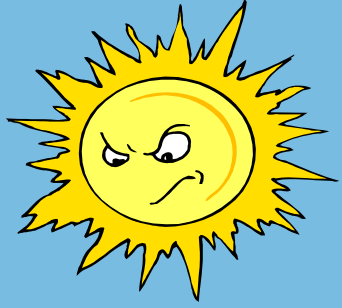


Risk Management for Summer Hazards

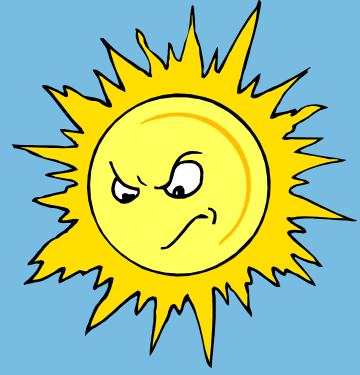
Mitigating the Hazards of the Summer Months!

What are the Hazards of Summer?



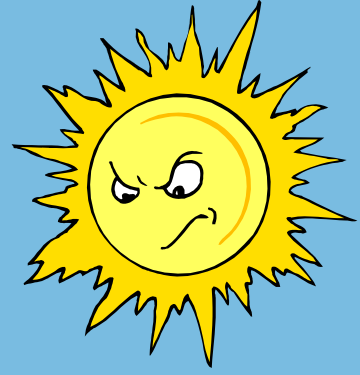
- Sun Exposure
- Heat Related Illnesses
- Severe Storms
- Tornadoes
- Lightning Storms
- Insects
- Stinging Insects
- Allergies
- Wildfires
- Poisonous Plants
- Poisonous Animals
- Interference with PPE
- Fatigue and Exhaustion

The Rising Temperatures



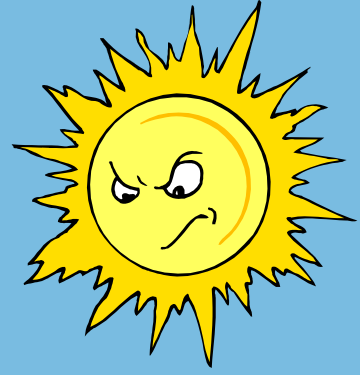
- As temperatures rise, so does the stress on your body.
- Two critical actions can help you battle the heat.
  - Acclimation to the heat.
  - Consumption of water.
- These two actions can help the most.

Your Body is a Good Regulator of Heat



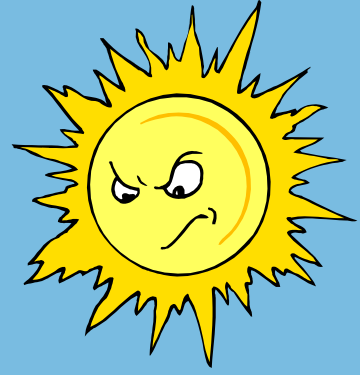
- Your body reacts to heat by circulating blood and raising your skin's temperature. The excess heat is then released through the skin by sweating.
- Physical activity can limit the amount of blood that flows to the skin to release heat.

Your Body is a Good Regulator of Heat



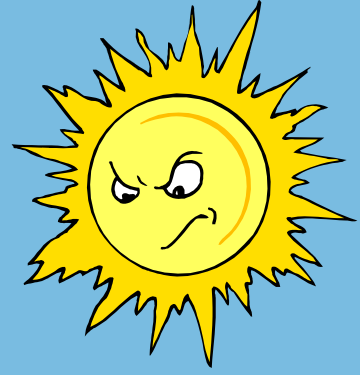
- Sweating can also maintain a stable body temperature if the humidity level is low enough to permit evaporation and if the fluids and salts you lose are adequately replaced.
- When your body cannot release heat, it stores it. This raises your core temperature and heart rate putting your health at risk.

Interfering with the Regulator



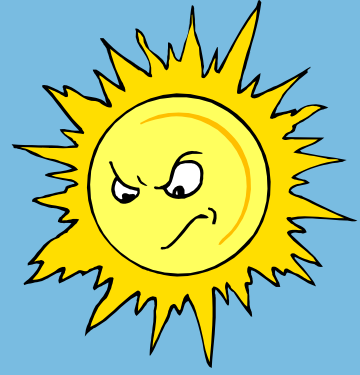
- Many factors can cause unbalances in your body's ability to handle heat.
  - Age
  - Weight
  - Fitness
  - Medical condition
  - Diet

Summer Heat



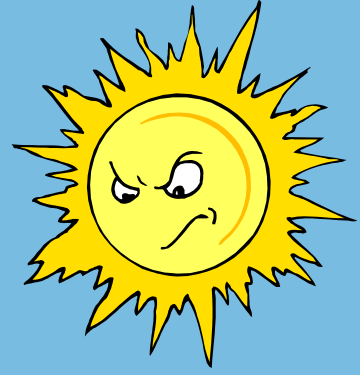
- Heat stress is a serious hazard in the workplace as well as at home.
- Excessive heat can place an abnormal stress on your body.
- When your body temperature rises even a few degrees above normal (which is about 98.6° F) you can...
  - ...experience muscle cramps
  - ...become weak
  - ...become disoriented
  - ...become dangerously ill

Six Factors of Heat Stress



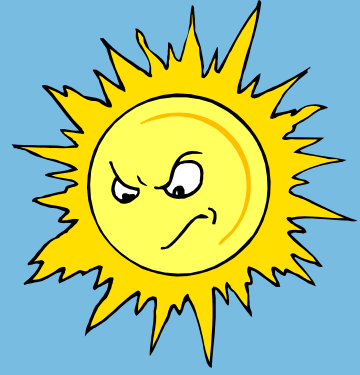
- Temperature
- Humidity
- Movement of Air or lack of air movement
- The radiant temperature of the surroundings
- Clothing
- Physical activity

Heat Stress - Early Sign of Trouble



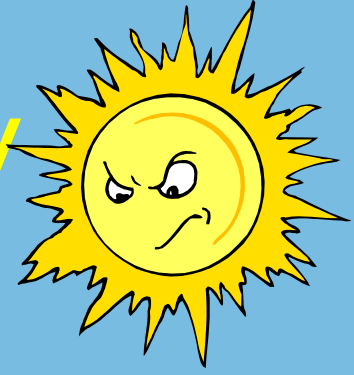
- Heat Stress will reduce your work capacity and efficiency.
- Signs of heat stress include:
  - Tiredness
  - Irritability
  - Inattention
  - Muscular cramps.

Heat Stress - Early Sign of Trouble (cont.)



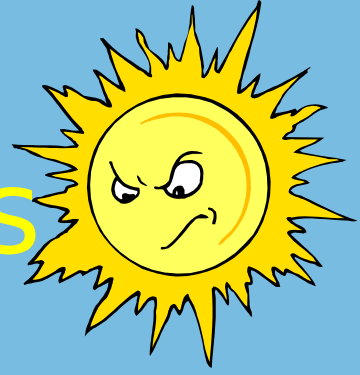
- If you are:
  - Overweight
  - Physically unfit
  - Suffer from heart conditions
  - Drink too much alcohol
  - Are not used summer temperatures
- You may be at greater risk of heat stress and should seek and follow medical advice.

Heat Rash - Another Early Sign of Trouble



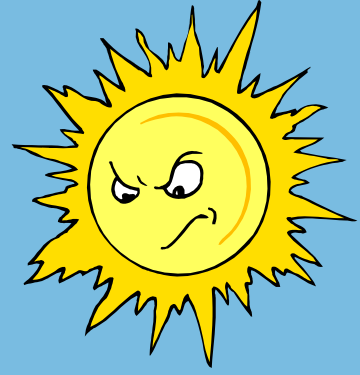
- Also known as prickly heat, occurs when people are constantly exposed to hot and humid air, causing a rash that can substantially reduce the ability to sweat.
- Heat rash is not just a nuisance because of discomfort, but by reducing the ability to sweat, the ability to tolerate heat is reduced.

Heat Rash and Heat Stress



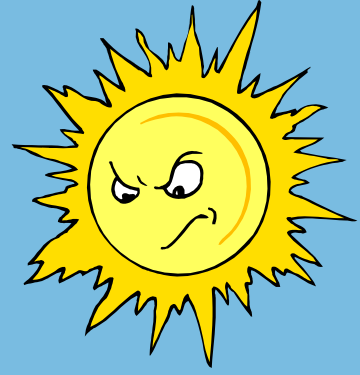
- First Aid for Heat Rash
  - Cleanse the affected area thoroughly and dry completely.
  - Calamine or other soothing lotion may help relieve the discomfort.
- First Aid for Heat Stress
  - Good nutrition
  - Become Heat acclimated
  - Drink lots of fluids

Heat Cramps - Final Warning



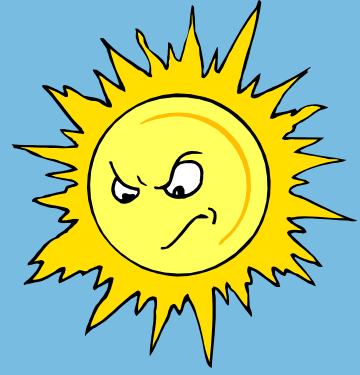
- May occur after prolonged exposure to heat.
- They are the painful intermittent spasms of the abdomen and other voluntary muscles.
- Heat Cramps usually occur after heavy sweating and may begin towards the end of the workday.

Heat Cramps - First Aid



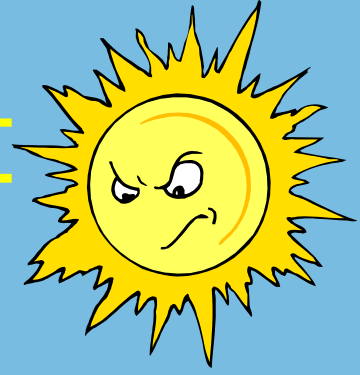
- First aid for heat cramps will vary. The best care is:
  - Rest
  - Move to a cool environment
  - Drink plenty of water- No pop, sparkling water, or Alcohol.
  - Electrolyte fluids such as Gatorade or Sqwincher may also be used.

Heat Exhaustion – Time Running Out



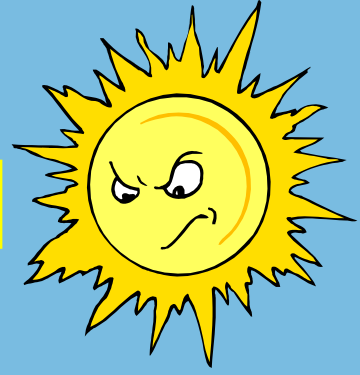
- May result from physical exertion in hot environments.
- Symptoms may include:
  - Profuse sweating
  - Weakness
  - Paleness of the skin
  - Rapid pulse
  - Dizziness / Nausea
  - Headache
  - Vomiting
  - Unconsciousness
- The skin is cool and clammy with sweat. Body temperature may be normal or subnormal.

Heat Exhaustion - What Happened



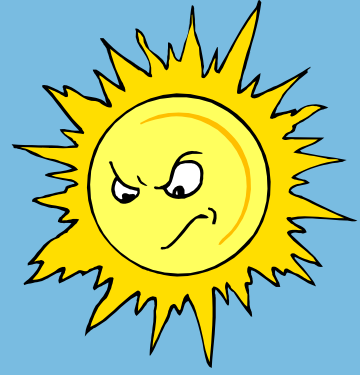
- Heat exhaustion develops when a person fails to replace fluids and salt that are lost through sweating.
- You may start to experience extreme weakness, fatigue, giddiness, nausea or a headache as heat exhaustion progresses.

Heat Exhaustion- First Aid



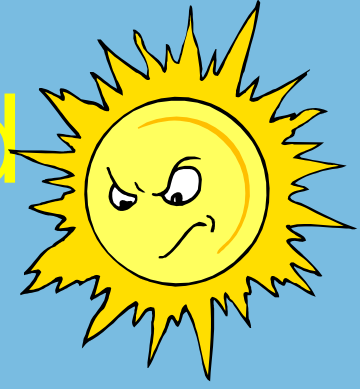
- Rest in the shade or cool place.
- Drink plenty of water (preferred) or electrolyte fluids.
- Loosen clothing to allow for your body to cool.
- Use cool wet rags to aid cooling.

Heat Stroke –
You're Out of Time



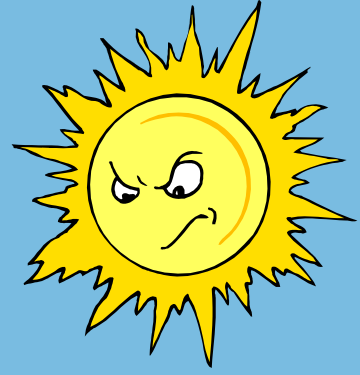
- This is a serious medical condition that urgently requires medical attention.
- Sweating is diminished or absent, which makes the skin hot and dry.
- Body temperature is very high (104° F and rising).

Heat Stroke - Signs and Symptoms



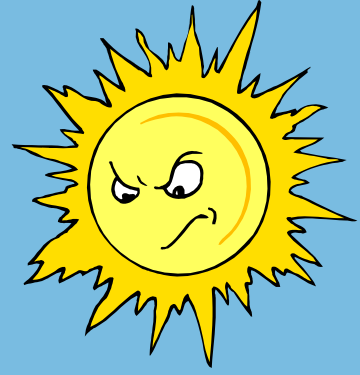
- Mental confusion
- Delirium
- Chills
- Dizziness
- Loss of consciousness
- Convulsions or coma
- A body temperature of 104° F or higher
- Hot, dry skin that may be red, mottled or bluish
- A strong fast pulse.

Heat Stroke – **Rapid Response**



- If you suspect someone is suffering from heat stroke, call an ambulance immediately.
- Their condition will rapidly deteriorate.
- You must provide care immediately.

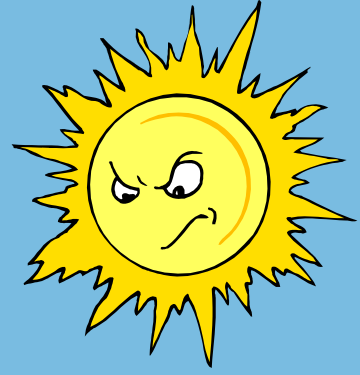
Heat Stroke - First Aid



- **This is a Medical Emergency!!**
- Brain damage and death are possible.
- Until medical help arrives, move the victim from the heat and into a cool place.

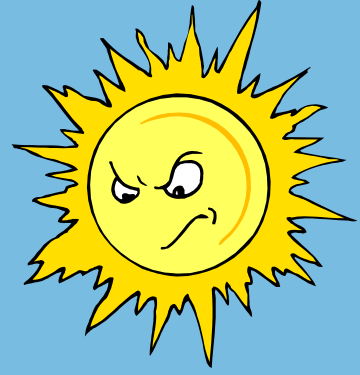
Get Medical Help!!!

Heat Stroke - First Aid

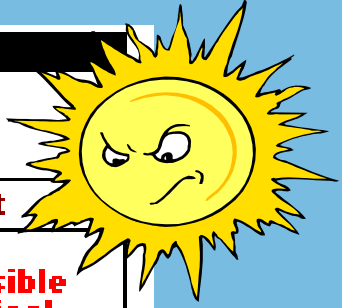


- You must use extreme caution when soaking clothing or applying water to a victim. Shock may occur if done to quickly or with too cool of water.
- Soak his or her clothes with water and use a fan or ice packs.
- Douse the body continuously with a cool liquid and summon medical aid immediately.

The Heat Index



- The heat index table was developed by the Weather Service.



General Heat Stress Index

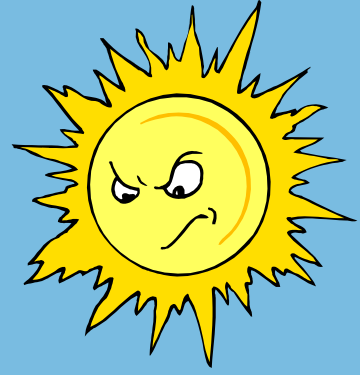
Danger Category	Apparent Temperature (°F) (Humiture)	Heat Syndrome
IV. Extreme Danger	>130°	Heatstroke or sunstroke imminent
III. Danger	105° – 130°	Sunstroke, heat cramps, or heat exhaustion likely. Heatstroke possible with prolonged exposure and physical activity.
II. Extreme Caution	90° – 105°	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and physical activity.
I. Caution	80° - 90°	Fatigue possible with prolonged exposure and physical activity.

Note: Degree of heat stress may vary with age, health, and body characteristics.

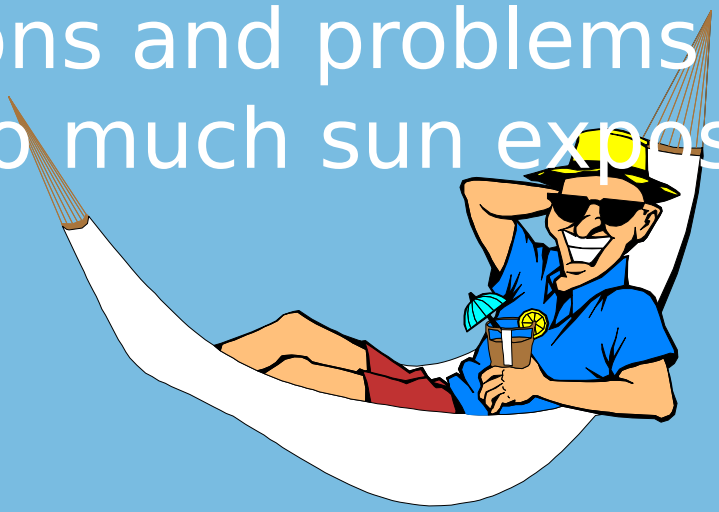
TEMPERATURE °F	Relative Humidity 10%	20%	30%	40%	50%	60%	70%	80%	90%
104	98	104	110	120	>130	>130	>130	>130	>130
102	97	101	108	117	125	>130	>130	>130	>130
100	95	99	105	110	120	>130	>130	>130	>130
98	93	97	101	106	110	125	>130	>130	>130
96	91	95	98	104	108	120	128	>130	>130
94	89	93	95	100	105	111	122	128	>130
92	87	90	92	96	100	106	115	122	128
90	85	88	90	92	96	100	106	114	122
88	82	86	87	89	93	95	100	106	115
86	80	84	85	87	90	92	96	100	109
84	78	81	83	85	86	89	91	95	99
82	77	79	80	81	84	86	89	91	95
80	75	77	78	79	81	83	85	86	89
78	72	75	77	78	79	80	81	83	85
76	70	72	75	76	77	77	77	78	79
74	68	70	73	74	75	75	75	76	77

NOTE: When the air temperature is above 80 degrees F. and the relative humidity is above 40% the temperature the body experiences is greater than the air temperature.

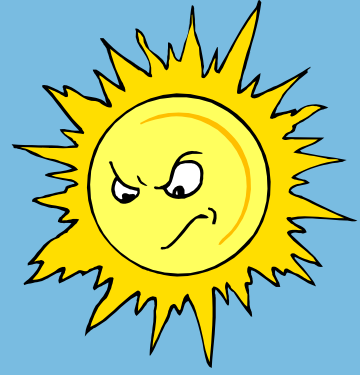
Soaking in the Sun



- The power of the sun can feel good when emerging from the Winter blahs.
- Caution must be observed when exposure to the sun is frequent and intense.
- Health conditions and problems can arise from too much sun exposure.

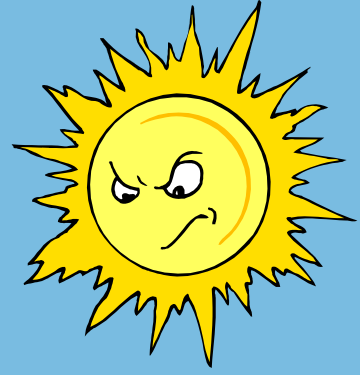


Common Sun Related Health Problems - Skin Cancer



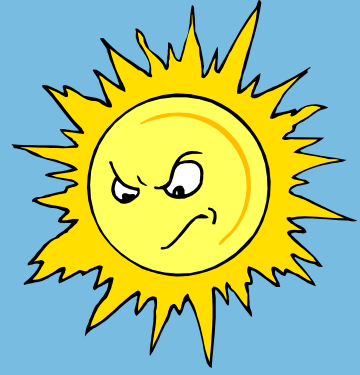
- Exposure to UV radiation can lead to skin cancer. The three most common:
  - Basal Cell
  - Squamous Cell
  - Melanoma
- Receiving one or two blistering sunburns before the age of 18 at least doubles an individual's risk for developing melanoma. (AAD, 1994).

Common Sun Related Health Problems - Eye Damage



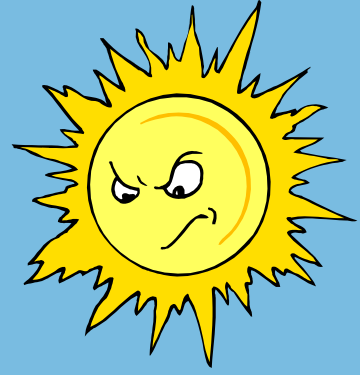
- Eye Damage from UV radiation
- Long exposure to sunlight can lead to eye problems later in life, such as cataracts.
- Another potential effect of UV radiation is a "burning" of the eye surface, called "snow blindness" or photokeratitis from sunlight.

Common Sun Related Health Problems - Eye Damage



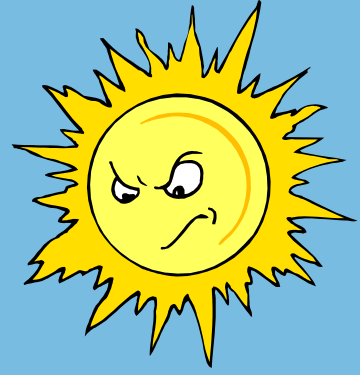
- Snow Blindness effects usually disappear within a couple of days, but may lead to further complications later in life.
- UVB damage to the eyes is also cumulative, so it is never too late for people to start protecting their eyes.

Common Sun Related Health Problems - Premature Aging



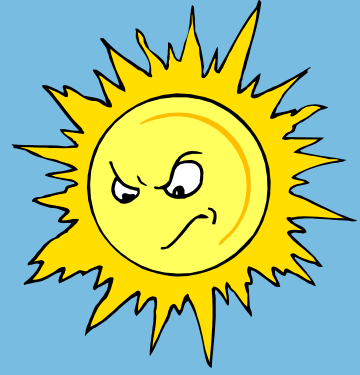
- Repeated exposure to the sun can cause premature aging effects.
- Sun-induced skin damage causes wrinkles and furrows, easy bruising, brown or “liver spots” on the skin.
- Because this exposure in cumulative, protection can never be to late.

Common Sun Related Health Problems - Immune System



- Scientists believe sunburns can alter the distribution and function of disease-fighting white blood cells in humans for up to 24 hours after exposure to the sun.
- Repeated overexposure to UV radiation can cause more damage to the body's immune system.
- Mild sunburns can directly suppress the immune functions of human skin where the sunburn occurred, even in people with dark skin.
  (http://www.nsc.org/ehc/sunwise/health.htm#skin)

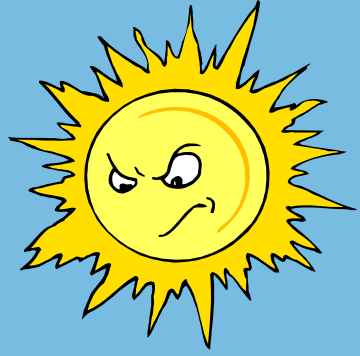
Let’s Talk About The Sting of Summer



- With increased temperatures, many insects become very active.

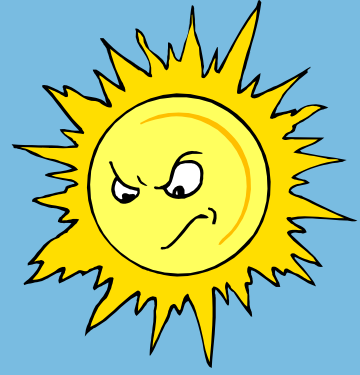
- Often these insects are just a nuisance, but these insects can cause many health related problems.

The Stinging Insects



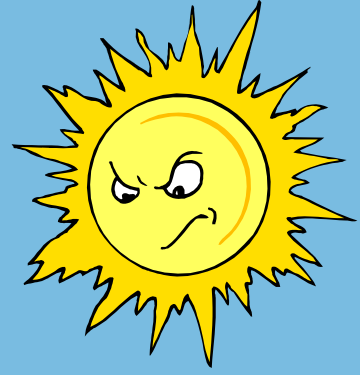
- Common Ones:
  - Bees
  - Wasps
  - Hornets
  - Yellow Jackets
  - Ants
- Some Uncommon Ones in this area:
  - Caterpillers
  - Centipedes
  - Black Widow Spider
  - Brown Recluse or Fiddleback Spider

The Common Problems



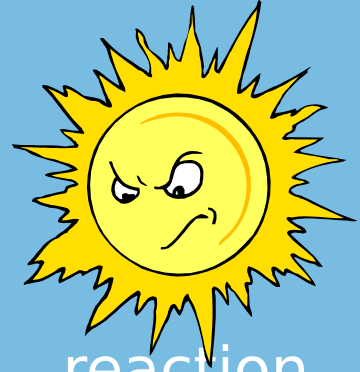
- Over 2 million people are allergic to stinging insects.
- An allergic reaction to an insect sting can occur immediately, within minutes, or even hours after the sting (although never more than 24 hrs).
- People who have experienced a systemic allergic reaction to an insect sting have a 60% chance of a similar (or worse) reaction if stung again.

How to Prevent Stinging Attacks



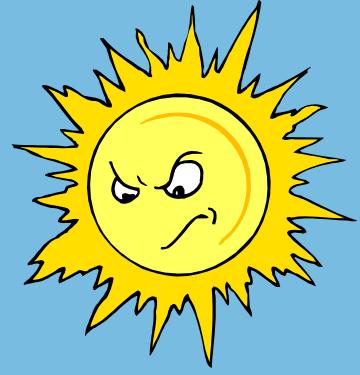
- Stinging insects are especially attracted to
  - sweet fragrances (perfumes, colognes, and hair sprays)
  - picnic food
  - open soda and beer containers
  - garbage areas.
- Avoiding these attractants will lessen a person's chance of being stung.

The Sting of Anaphylaxis



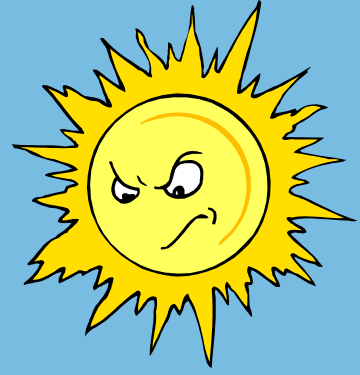
- Anaphylaxis is the medical term for an allergic reaction.
- The treatment to an allergic reaction is the use of epinephrine or other substances.
  - Epinephrine can be self-injected or administered by a doctor.
- Often intravenous fluids, oxygen, and other treatments are necessary as well.
- It is very important to call for medical assistance immediately, even if the person says “I am okay” after administering epinephrine.

First Aid May Not Be Enough



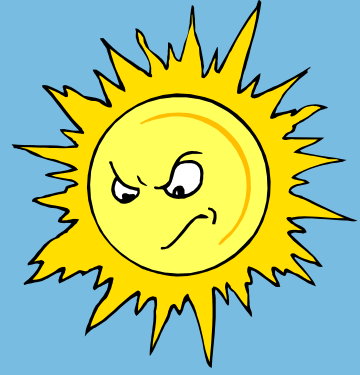
- Once stabilized you may be required to stay overnight at the hospital under close observation.
- People who have had previous allergic reactions and rely on the protection of epinephrine must remember to carry it with them wherever they go.
- Also, because one dose may not be enough to reverse the reaction, immediate medical attention following an insect sting is recommended.

Some Symptoms of an Allergic Reaction



- Hives, itching, and swelling in areas other than the sting site.
- Tightness in the chest and difficulty in breathing.
- Hoarse voice or swelling of the tongue.
- Dizziness or a sharp drop in blood pressure.
- Unconsciousness or cardiac arrest.

Basic First Aid for Stings

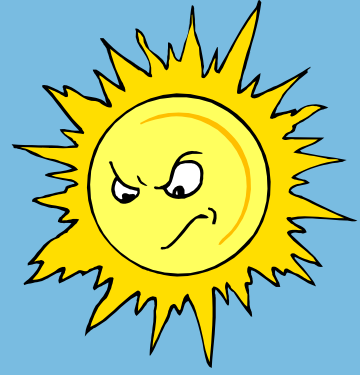


- Bees will sting only once leaving the barbed stinger in the flesh.
  - Remove the stinger scrap with a credit card or other object.
  - DO NOT pinch and pull out the stinger, this will inject more venom.
- Wasps, hornets and yellow jackets repeatedly sting leaving no stinger behind.

Basic First Aid for Stings

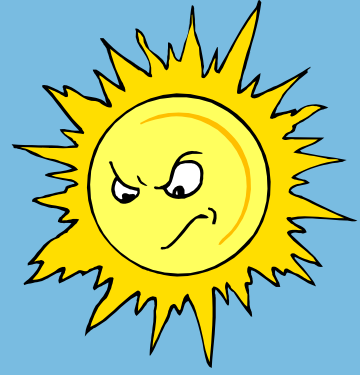
- If breathing difficulties develop, or if the person appears to be having an adverse reaction, **DIAL 1-1-2 (Germany). Get Prompt medical care.**
- Wash bite/sting area well with soap and water.
- If stung or bitten on the fingers or hand, remove any rings or jewelry in case of swelling.
- Apply a cold compress.

Other Animal or Insect Hazards



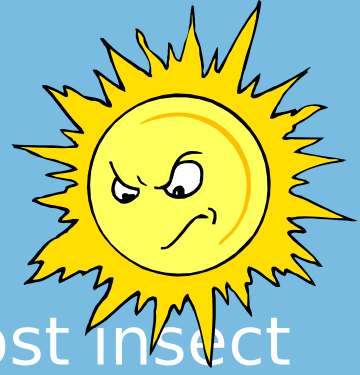
- Poisonous Animals such as
  - Snakes
  - Spiders
- Are also prevalent during the Summer Months
- Also disease carrying insects such as mosquitoes and ticks are prevalent.

A Little about Ticks…



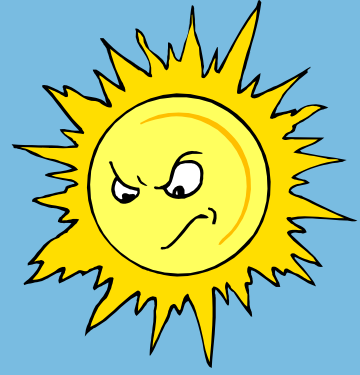
- Ticks can carry a wide variety of diseases.
- Ticks contract these diseases from the host they attach to.
- Some common diseases are:
  - Lyme Disease
  - Rocky Mountain Spotted Fever
- Most diseases are common to specific species of tick.

Insect Protection



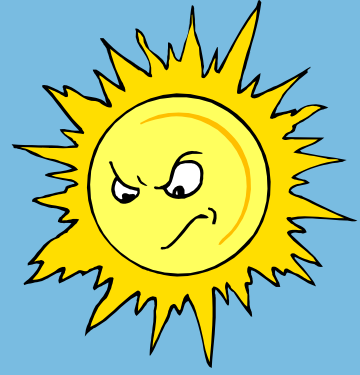
- Two primary repellants are used by most insect repellants. They are:
  - Insecticide permethrin
  - Insect repellent deet *(N,* N-diethyl-m-tiluarnide)
- It is important that each individual be carefully monitored when using either of these products.
- As with any chemical, allergic reactions can develop from the protectant.

How DEET Works



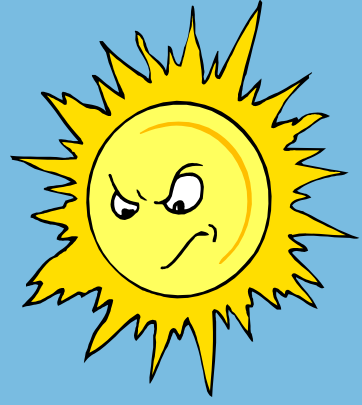
- Deet repellents works by evaporation, creating a shield a few inches above the area of application.
- The presence of the repellent vapor confuses insects so they can’t locate a target host.
- In most cases it usually requires less than 1% of the repellent to form this protective barrier.

How Permethrin Works



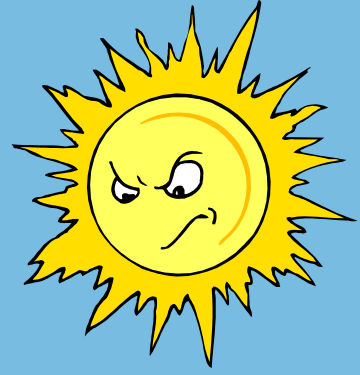
- Permethrin is actually a contact insecticide.
- Permethrin is considered ideal because it is applied to clothing, gear, mosquito nets and bedding and is not applied directly on the body.
- Where ticks are a concern, permethrin on clothing or gear will kill ticks that travel across as little as 10" of treated fabric.

Some Natural Defenses



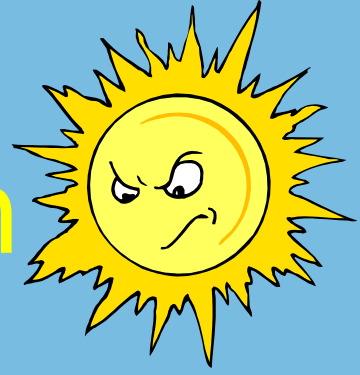
- There are well over 150 *natural repellents* while the most common are:
- Citronella
- Eucalyptus
- Lemon Leaves
- Peppermint
- Lavender
- Cedar Oil
- Canola
- Rosemary
- Pennyroyal
- Cajeput
- Generally the EPA considers these oils safe to use in low dosage but overall their effectiveness is limited to less than 30 minutes.

Additional Sources of Information on insects and repellants



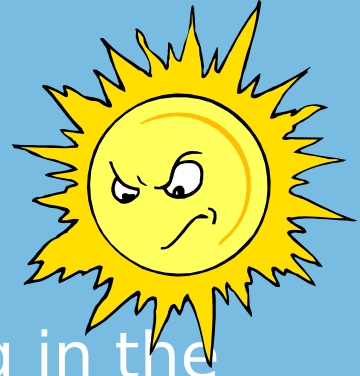
- http://www.tickinfo.com
- http://allergy.mcg.edu/ALK/fact.html
- http://www.emeraldcoast.com/government/emergency/poison.htm
- http://www.uos.harvard.edu/ehs/hot_topics/pom_yellowjacket.html

Let’s Have Fun In the Sun

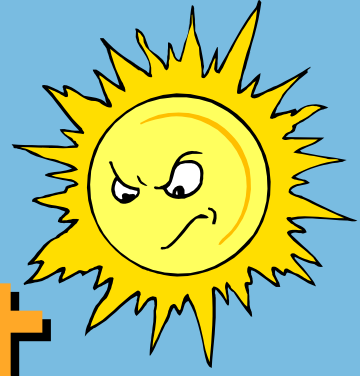


- With everything, moderation is best.
- Avoid those beehives and hornet nests.
- Keep waste containers, beverages and food in enclosed containers.
- Wear protective clothing from ticks, mosquitoes.
- Wear proper sunscreens when out in the sun.

Let’s Have Fun In the Sun



- If you are sensitive to sunburns avoid being in the sun from 10 AM to 3 PM when the sun is at its peak.
- Consume lots of water to stay hydrated.
- Cool down in air conditioned rooms or near fans.
- Wear light colored, natural fiber clothing to help your body to repel heat absorption and cool easier.
- Pace yourself during strenuous activities.



Have a Great Summer!

Mitigate the Summer